REMARKS/ARGUMENTS

Claims 1-14 are now pending in the application. Claim 1 has been amended as suggested by the Examiner. No new matter is added. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

CLAIM OBJECTION

Claim 1 stands objected due to an informality contained therein.

Applicant has amended Claim 1 to correct the informality pointed out by the Examiner.

REJECTION UNDER 35 U.S.C. § 102

Claim 8 stands rejected under 35 U.S.C. § 102(e) as being unpatentable over Tong et al. (U.S. Pat. No. 6,865,373). This rejection is respectfully traversed as follows.

In a frequency selective fading channel, the inter-symbol interference exists between neighbor symbols. Therefore, in a general space-time encoding method, there is not only interference between diversity signals, but also interference between neighbor encoding units and interference between neighbor encoding blocks.

Tong appears to only teach a "well-known space-time matrix S for the case that a BTS with two antennas is transmitting first and second complex numbered data streams" (See Tong, column 1, lines 43-45).

Applicant respectfully submits that **the well-known space-time encoding method described by Tong** is a conventional method and has the following limitations.

The method **only takes into account the interference between diversity signals**, i.e. interference between signals transmitted by the two antennas. By encoding data streams (x_1, x_2) using the space-time matrix, **the interference between diversity signals can be eliminated**, so there will be no interference between the signals transmitted by the two antennas.

But as discussed above, **there is not only interference between diversity signals, but also interference between neighbor encoding units and interference between neighbor**

encoding blocks. If the interferences between neighbor encoding units were neglected, the communication performance would be worse.

To solve the above problem, **claim 8** provides a space-time encoding method for a frequency selective fading channel, which **takes the interferences between neighbor encoding units into account**. According to claim 8, "taking, by an encoder, **two independent data fields of a time slot in input data as a processing unit** with space-time orthogonal encoding method, **encoding the two independent data fields and generating two data vectors**, thereby forming two diversity signals". Since the two data fields are independent of each other, i.e. they are irrelative, and there will be no interference between the diversity signals generated from the two independent data fields. Thus by space-time orthogonal encoding, the interference between diversity signals can be eliminated; **by taking two independent data fields as the input of the space-time orthogonal encoding, the interference between neighbor encoding units can be eliminated, which enhances the communication performances**.

From the discussion above, Applicant respectfully submits that Tong fails to disclose or suggest the claims features of claim 8, i.e. "taking, by an encoder, **two independent data fields of a time slot in input data as a processing unit** with space-time orthogonal encoding method, **encoding the two independent data fields and generating two data vectors**, thereby forming two diversity signals". So claim 8 should be not be anticipated by or even by unpatentable over Tong. Applicant therefore request withdrawal of the rejection of claim 8.

REJECTION UNDER 35 U.S.C. § 103

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Tong, and further in view of Judson et al. (U.S. Pat. No. 7,181,244). This rejection is respectfully traversed as follows.

Without addressing the Office action's assertions that are not conceded, Applicant respectfully submits that claim 9 recites similar limitations as those in claim 8.

Judson discloses "a novel mobile unit which communicates with a new and advantageous base station" which "includes a system for generation of position information" (See Judson, column 1, lines 55-60). **Since Judson does not mention anything related with "space-time orthogonal encoding", Applicant respectfully submits that** the addition of **Judson** still **fails to disclose or suggest the claimed features of claim 8.**

As such, it can be seen that, Tong and Judson, alone or combined, do not disclose or suggest the claimed features of claim 8, and claim 9 depends from claim 8. That is, Applicant respectfully submits that claims 8 and 9 are patentably distinguishable from the cited references. Applicant therefore also requests withdrawal of the rejection of claim 9.

ALLOWABLE SUBJECT MATTER

Applicant thanks the Examiner and acknowledges the allowance of claims 1-7 and 10-14.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested.

Respectfully submitted,
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